BIOCARE MEDICAL

Smooth Muscle Actin (SMA)

Concentrated and Prediluted Monoclonal Antibody

Control Number: 901-001-032415

ISO 9001&13485 CERTIFIED

Catalog Number:	CM 001 A, B, C	PM 001 AA	IP 001 G10	OAI 001 T60
Description:	0.1, 0.5, 1.0 ml, concentrated	6.0 ml, prediluted	10 ml, prediluted	60 tests, prediluted
Dilution:	1:100-1:200	Ready-to-use	Ready-to-use	Ready-to-use
Diluent:	Van Gogh Yellow	N/A	N/A	N/A

Intended Use:

For In Vitro Diagnostic Use

Smooth Muscle Actin (SMA) [1A4/asm-1] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of smooth muscle actin protein by immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence should be complemented by morphological studies using proper controls and should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

Summary and Explanation:

This antibody recognizes the alpha-smooth muscle isoform of actin. It shows no cross-reaction with actin from fibroblasts (beta- and gamma-cytoplasmic), striated muscle (alpha-sarcomeric), and myocardium (alpha-myocardial). Its epitope is composed of the acetyl group and the first 4 amino acids on the N-terminal end of the peptidic chain of alpha-smooth actin. Biocare's 1A4 MAb stains smooth muscle cells in vessel walls, gut wall, and myometrium. Studies have shown that myoepithelial cells in breast and salivary glands are also stained as they also contain actin. This MAb is reportedly useful for identifying tumors arising from smooth muscle and myoepithelial cells.

Principle of Procedure:

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human, mouse, rat, cat, dog, sheep and horse

Clone: 1A4 (also known as asm-1)

Isotype: IgG2a /kappa

Total Protein Concentration: ~10 mg/ml. Call for lot specific Ig concentration.

Epitope/Antigen: Smooth Muscle Actin

Cellular Localization: Cytoplasmic

Positive Control: Blood vessels, leiomyoma or leiomyosarcoma

Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

Supplied As: Buffer with protein carrier and preservative

Storage and Stability:

Store at 2ºC to 8ºC. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Protocol Recommendations (intelliPATH and manual use):

Peroxide Block: Block for 5 minutes with Biocare's Peroxidazed 1.

Pretreatment Solution (recommended): N/A

Pretreatment Protocol: N/A

Protein Block (Optional): Incubate for 5-10 minutes at RT with Biocare's Background Punisher.

Protocol Recommendations (intelliPATH and manual use) Cont'd:

Primary Antibody: Incubate for 30 minutes at RT.

Probe: Incubate for 10 minutes at RT with a secondary probe.

Polymer: Incubate for 10-20 minutes at RT with a tertiary polymer.

Chromogen:

Incubate for 5 minutes at RT with Biocare's DAB - OR - Incubate for 5-7 minutes at RT with Biocare's Warp Red.

Counterstain:

Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:

1. This antibody has been optimized for use with Biocare's MACH 4 Universal HRP-Polymer Detection and intelliPATH Universal HRP Detection Kit. Other Biocare polymer detection kits may be used; however, users must validate incubation times and protocols for their specific application.
2. For mouse and rat tissue use concentrate titer for optimal staining.
3. Use TBS buffer for washing steps.

intelliPATH™ Automated Slide Stainer:

IP001 is intended for use on the intelliPATH™ Automated Slide Stainer. Refer to the intelliPATH Automated Slide Stainer manual for specific instructions on its use.

Protocol Recommendations (ONCORE Automated Slide Staining System):

OAI001 is intended for use with the ONCORE Automated Slide Staining System. Refer to the ONCORE Automated Slide Staining System User Manual for specific instructions on its use. Protocol parameters in the ONCORE Automated Slide Stainer Protocol Editor should be programmed as follows:

Protocol Name: SMA
Protocol Template (Description): Ms HRP Template 1
Dewaxing (DS Option): DS2
Antigen Retrieval (AR Option): AR2, low pH; 80°C
Reagent Name, Time, Temp.: SMA, 30 min., 25°C

Limitations:

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. The clinical interpretation of any positive or negative staining should be evaluated within the context of clinical presentation, morphology and other histopathological criteria by a qualified pathologist. The clinical interpretation of any positive or negative staining should be complemented by morphological studies using proper positive and negative internal and external controls as well as other diagnostic tests.

Quality Control:

Refer to CLSI Quality Standards for Design and Implementation of Immunohistochemistry Assays; Approved Guideline-Second edition (I/LA28-A2). CLSI Wayne, PA, USA (www.clsi.org). 2011

Biocare Medical
4040 Pike Lane
Concord, CA 94520
USA

IVD CE

EC REP EMERGO EUROPE
Molenstraat 15
2513 BH, The Hague
The Netherlands

Tel: 800-799-9499 | www.biocare.net | Fax: 925-603-8080

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Precautions:

1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN_3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (2)
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (3)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at http://biocare.net/.

References:

1. Sheehan M, O'Briain DS. False-positive immunoractivity with muscle-specific actins in non-Hodgkin's lymphomas. Arch Pathol Lab Med. 1995 Mar;119(3):225-8.
2. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
3. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

Troubleshooting:

Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002

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